

**KNOWLEDGE PROBE 3: CONTEMPORARY WIRELESS TECHNOLOGY: CELL PHONES,  
WIRELESS LOCAL AREA NETWORKS, AND SHORT-RANGE RADIO**  
**Cell Phone Technologies**

**Learning Objectives**

1. Identify the organizations that set standards for cell phone.
  2. Describe differences between cellular phone systems.
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1. Which generation analog system was analog?
    - a. 1G
    - b. 2G
    - c. 2.5G
    - d. 3G
  2. Which generation cell phone system is digital?
    - a. 2G
    - b. 2.5G
    - c. 3G
    - d. All of the above
  3. Which of the following is NOT a feature of the AMPS system?
    - a. Frequency division duplexing
    - b. Frequency modulation
    - c. TDMA
    - d. 800 – 900 MHz band
  4. What standard is associated with the first US digital system?
    - a. IS-41
    - b. IS-95
    - c. IS-136
    - d. IS-213
  5. IS-95 standard uses
    - a. CDMA
    - b. FDMA
    - c. SDMA
    - d. TDMA
  6. What is the standard bandwidth of a US AMPS FDMA and IS-136 TDMA signal?
    - a. 30 kHz
    - b. 50 kHz
    - c. 200 kHz
    - d. 1.25 MHz



7. The bandwidth of a GSM signal is
  - a. 30 kHz
  - b. 50 kHz
  - c. 200 kHz
  - d. 1.25 MHz
8. GSM uses
  - a. CDMA
  - b. FDMA
  - c. SDMA
  - d. TDMA
9. How many calls can be transmitted concurrently in a GSM band?
  - a. 1
  - b. 3
  - c. 4
  - d. 8
10. What is the packet data system used with GSM phones?
  - a. CDMA2000
  - b. GPRS
  - c. TDMA
  - d. 3G
11. The maximum data rate of an EDGE transmission is
  - a. 50 kbps
  - b. 270 kbps
  - c. 384 kbps
  - d. 1.288 Mbps
12. The typical bandwidth of a CDMA signal is
  - a. 30 kHz
  - b. 50 kHz
  - c. 200 kHz
  - d. 1.25 MHz
13. CDMA2000 1xRTT EV-DO can transmit data at a maximum rate of
  - a. 270 kbps
  - b. 307 kbps
  - c. 384 kbps
  - d. 1.288 Mbps



14. What is the bandwidth of a W-CDMA signal?
  - a. 200 kHz
  - b. 1.25 MHz
  - c. 3.75 MHz
  - d. 5 MHz
15. Forthcoming 3G systems promise a data transmission rate up to
  - a. 1.288 Mbps
  - b. 1.75 Mbps
  - c. 2 Mbps
  - d. 5 Mbps
16. Which of the following can a cell phone with packet data capability do?
  - a. Email
  - b. Internet access
  - c. Short messaging
  - d. All of the above
17. Which is the predominant technology of the cell phone carriers Verizon and Sprint?
  - a. AMPS
  - b. CDMA
  - c. GSM
  - d. TDMA
18. Which is the predominant technology of the cell phone carriers Cingular and T-Mobile?
  - a. AMPS
  - b. CDMA
  - c. GSM
  - d. TDMA
19. What technology will 3G phones use?
  - a. AMPS
  - b. GSM
  - c. TDMA
  - d. WCDMA